

FIG. 1  
(Prior Art)

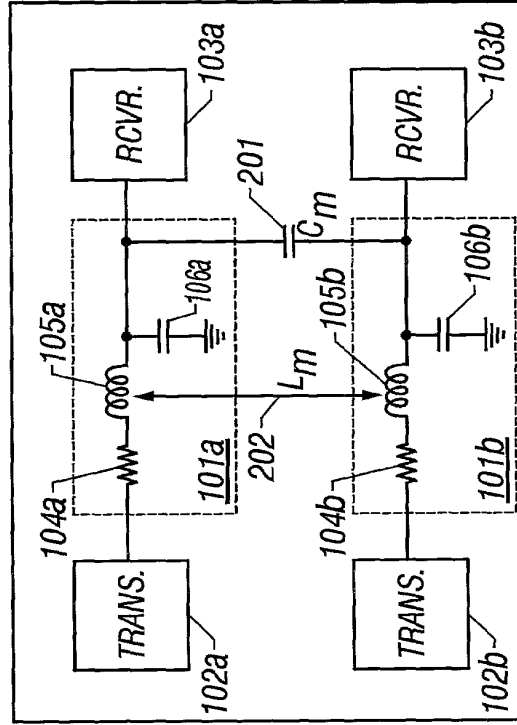


FIG. 2  
(Prior Art)

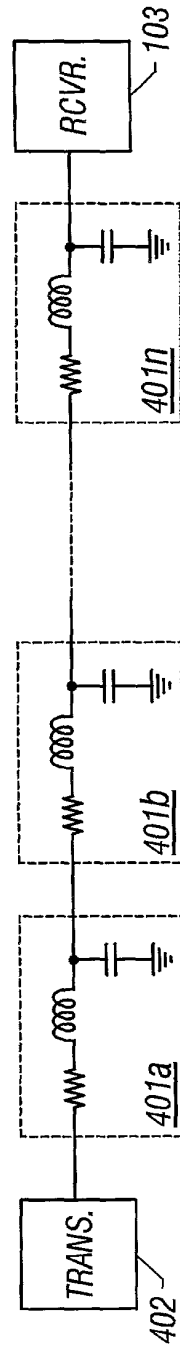


FIG. 4  
(Prior Art)

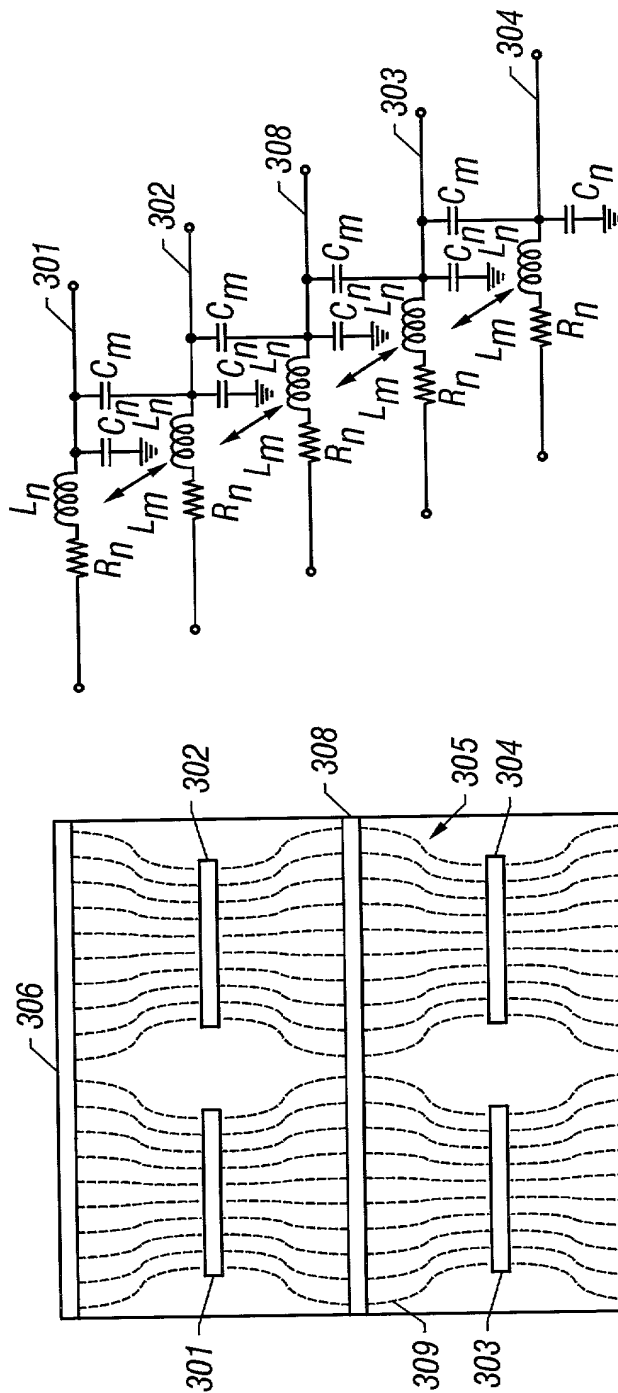


FIG. 3B  
(Prior Art)

FIG. 3A  
(Prior Art)

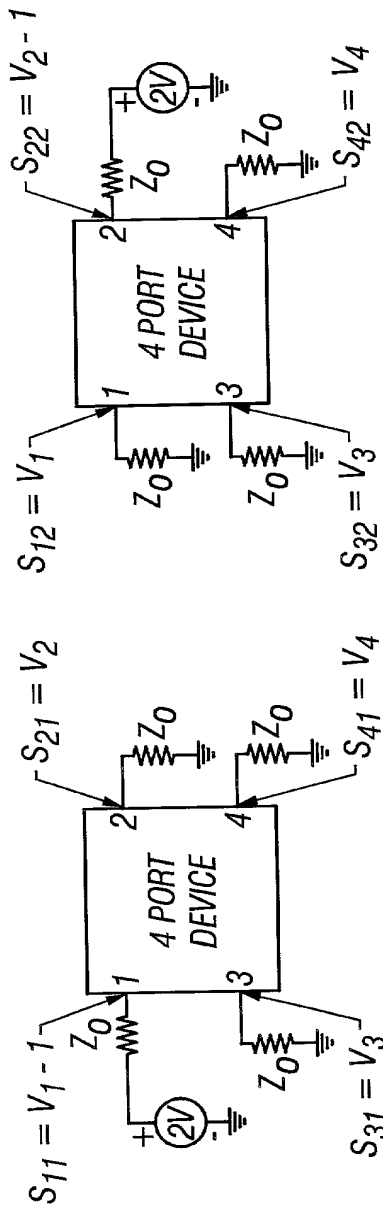


FIG. 5A

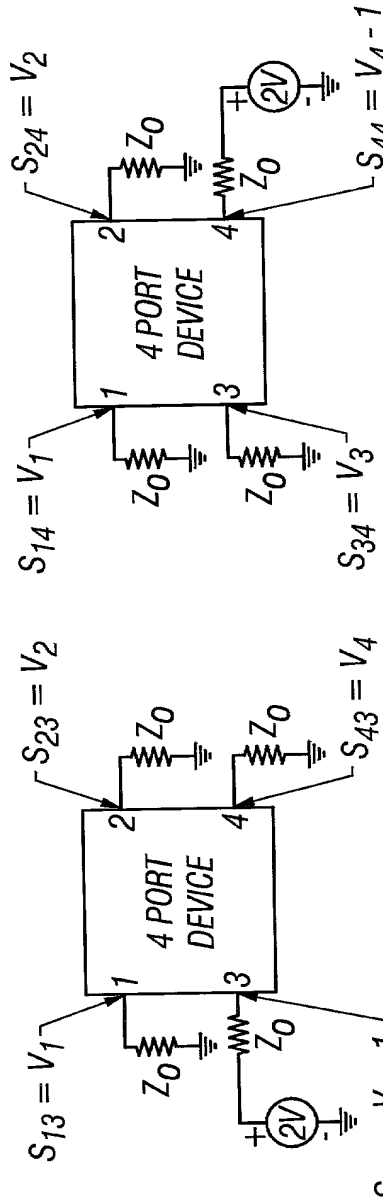


FIG. 5C

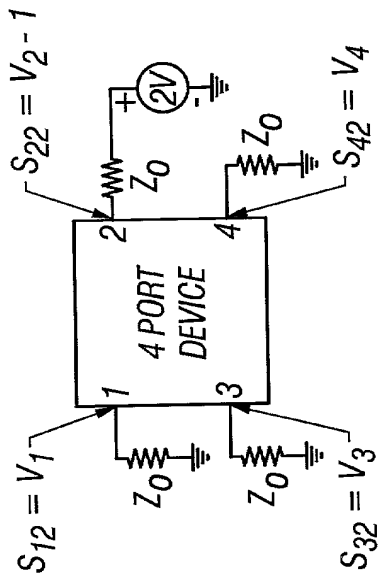


FIG. 5B

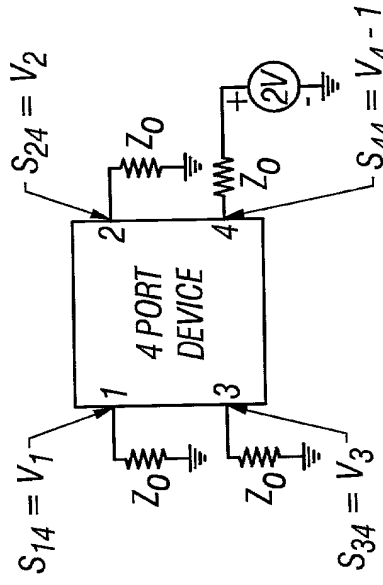


FIG. 5D

$$[S] = \begin{bmatrix} S_{11} & S_{12} & S_{13} & S_{14} \\ S_{21} & S_{22} & S_{23} & S_{24} \\ S_{31} & S_{32} & S_{33} & S_{34} \\ S_{41} & S_{42} & S_{43} & S_{44} \end{bmatrix}$$

FIG. 5E



701

SCATTERING PARAMETER INTEGRATION TOOL (S.P.I.T.) - VERSION 1.00

702 SPICE SUBCIRCUIT (.sub) PLUTO\_2

703  $Z_0$  50

704  $F_{max}$  (MHz) 12732.395447351

705 FREQUENCY STEP (MHz) 5

706 SUBCIRCUIT LABELS

707 PORT DESIGNATION

709 READ FILE

710 UNTITLED

711 100

712 200

713 BUILD S-PARAMETERS

714 EXIT

708

FIG. 7

801

SCATTERING PARAMETER INTEGRATION TOOL (S.P.I.T.) - VERSION 1.00

SPICE SUBCIRCUIT (.sub) PLUTO\_2

$Z_0$  50

$F_{max}$  (MHz) 12732.395447351

FREQUENCY STEP (MHz) 5

SUBCIRCUIT LABELS

PORT DESIGNATION

802

801 READ FILE

802 UNTITLED

100

200

%c in %v in %p in %c out %v out %p out

1 2 3 4 5 6

713 BUILD S-PARAMETERS

714 EXIT

FIG. 8

SCATTERING PARAMETER INTEGRATION TOOL (S.P.I.T.)- VERSION 1.00

SPICE SUBCIRCUIT (.sub)

PLUTO\_2

50

12732.395447351

5

%c in

%v in

%p in

%c out

%v out

%p out

1

2

3

4

5

6

DONE BUILDING CITI FILE

BUILD S-PARAMETERS

EXIT

OUTPUT FILE (.ssub)

UNTITLED

MINIMUM RISETIME (ps)

100

SIMULATION DURATION (ns)

200

READ FILE

713

FIG. 9

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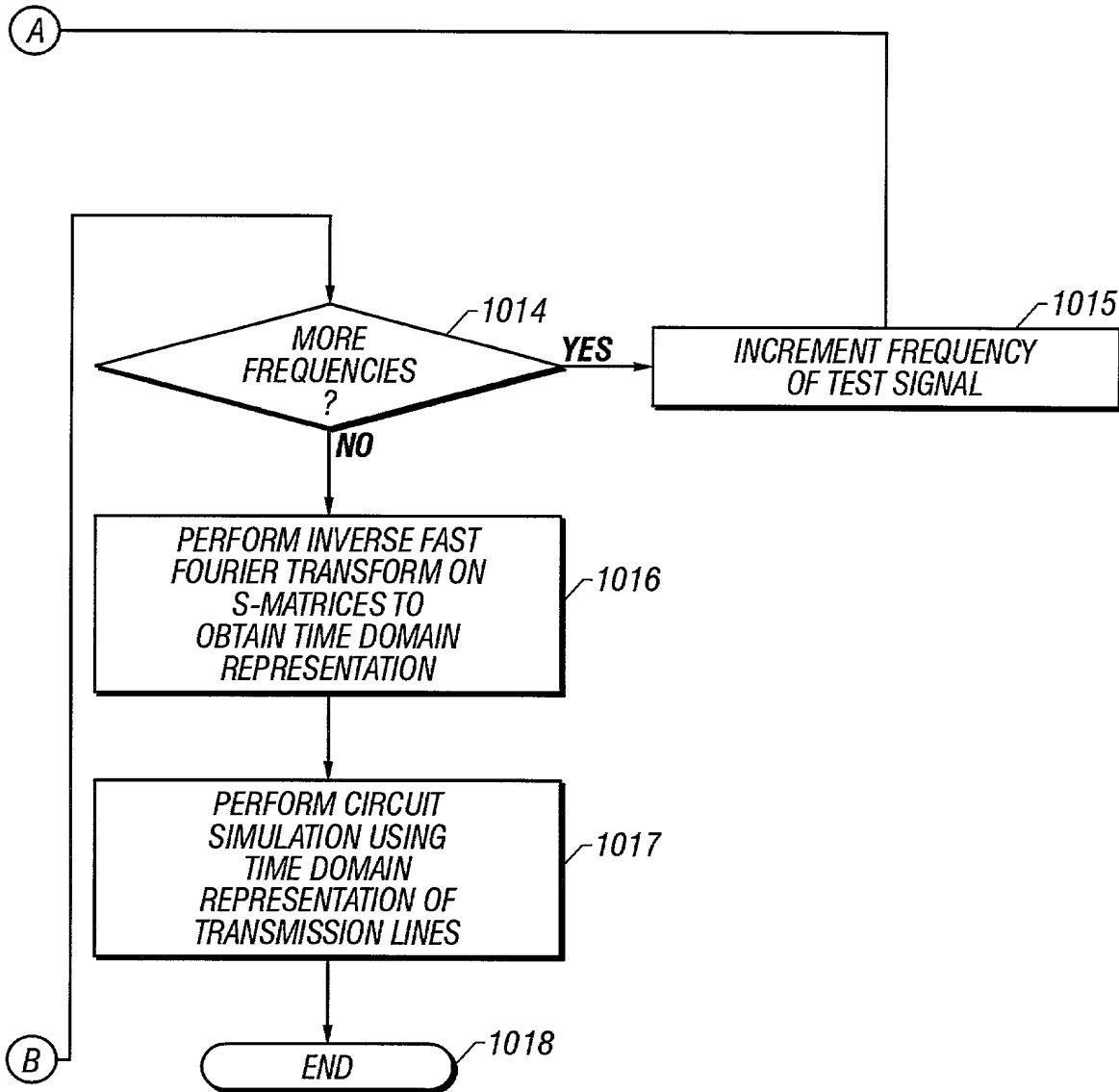


FIG. 10B

**DECLARATION AND POWER OF ATTORNEY  
FOR PATENT APPLICATION**ATTORNEY DOCKET NO. 10004730-1

As a below named inventor, I hereby declare that:

My residence/post office address and citizenship are as stated below next to my name;

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

**Software Tools For Generation Of Scattering Parameter Models Of N-Port Lumped Element Circuits For Use In Spice Simulators**

the specification of which is attached hereto unless the following box is checked:

( ) was filed on \_\_\_\_\_ as US Application No. or PCT International Application  
Number \_\_\_\_\_ and was amended on \_\_\_\_\_ (if applicable).

I hereby state that I have reviewed and understood the contents of the above-identified specification, including the claims, as amended by any amendment(s) referred to above. I acknowledge the duty to disclose all information which is material to patentability as defined in 37 CFR 1.56.

**Foreign Application(s) and/or Claim of Foreign Priority**

I hereby claim foreign priority benefits under Title 35, United States Code Section 119 of any foreign application(s) for patent or inventor(s) certificate listed below and have also identified below any foreign application for patent or inventor(s) certificate having a filing date before that of the application on which priority is claimed:

COUNTRY	APPLICATION NUMBER	DATE FILED	PRIORITY CLAIMED UNDER 35 U.S.C. 119
N/A			YES: _____ NO: _____
			YES: _____ NO: _____

**Provisional Application**

I hereby claim the benefit under Title 35, United States Code Section 119(e) of any United States provisional application(s) listed below:

APPLICATION NUMBER	FILING DATE

**U. S. Priority Claim**

I hereby claim the benefit under Title 35, United States Code, Section 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code Section 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, Section 1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

APPLICATION NUMBER	FILING DATE	STATUS (patented/pending/abandoned)

**POWER OF ATTORNEY:**

As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith:

Customer Number 022879Place Customer  
Number Bar Code  
Label hereSend Correspondence to:  
HEWLETT-PACKARD COMPANY  
Intellectual Property Administration  
P.O. Box 272400  
Fort Collins, Colorado 80527-2400**Direct Telephone Calls To:**William J. Streeter  
970 898 3886

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full Name of Inventor: Karl J. BoisCitizenship: USResidence: 1419 Stonehenge Drive Ft. Collins, CO 80525Post Office Address: Same as ResidenceInventor's Signature Date 07/03/2007